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Mols, Molecules and Molecular / Formula Mass.

(1) Calculate the number of formula units of calcium carbonate in 1.28g of calcium carbonate.

$CaCO_3$ mass. $= 1 \times Ca = 1 \times 40.08 = 40.08$

$1 \times C = 1 \times 12.01 = 12.01$

$3 \times O = 3 \times 16.00 = 48.00$

$100.09\ g/mol$

g → mols → formula.

$$1.28\ g\ CaCO_3 \times \frac{1\ mol\ CaCO_3}{100.09\ g\ CaCO_3} \times \frac{6.022 \times 10^{23}\ F.U.\ CaCO_3}{1\ mol\ CaCO_3}$$

$= 7.702 \times 10^{21} \equiv$ **7.70×10^{21} Formula Units**

(2) Calculate the number of Na^+ in 1.28g of sodium hydrogen carbonate?

$NaHCO_3$

g $NaHCO_3$ → mol $NaHCO_3$ → mol Na^+ → ions Na^+

mass of $NaHCO_3$ = 83.318 g/mol.

$$1.28\ g\ NaHCO_3 \times \frac{1\ mol\ NaHCO_3}{83.318\ g\ NaHCO_3} \times \frac{1\ mol\ Na^+}{1\ mol\ NaHCO_3} \times \frac{6.022 \times 10^{23}\ Na^+\ ions}{1\ mol\ Na^+}$$

$= 9.25 \times 10^{21}$ Na^+ ions